PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Motoaki KAMACHI, et al.

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Examiner: GOON, SCARLETT Y

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For: EXTERNAL PREPARATION FOR SKIN

DECLARATION UNDER 37 C.F.R. § 1.132

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Motoaki Kamachi, hereby declare and state:

THAT I am a citizen of Japan;

THAT I have received the degree of MS in 1989 from the University of Tokyo in Tokyo, Japan;

THAT I have been employed by SHOWA DENKO K.K. since Apr. 1. 1989, where I hold a position as Manager, with responsibility for new products;

THAT I am one of the inventors of the subject matter described and claimed in the above-identified application, and that I am familiar with the Office Action dated October 13, 2009, where the presently claimed invention has been rejected under 35 U.S.C. § 103(a) as unpatentable over "Kakuchi" (JP 2003-252904) in view of "Dederen" (U.S. Patent Application Publication 2002/0065328).

The following experiments were carried out either by me or under my direct supervision.

Experimental

1,6-anhydro-β-D-glucopyranose was used as a starting material of multi-branched polysaccharides.

Experiment Data 1

The viscosity of each of the formulations below was measured.

		Experiment 1-1	Experiment 1-2	Experiment 1-3	Experiment 1-4
Common components	1,3-BG	5.0	5.0	5.0	5.0
	ethanol	5.0	5.0	5.0	5.0
	citric acid 0.1%	10.0	10.0	10.0	10.0
	sodium citrate	1.0	1.0	1.0	1.0
	methylparaben	0.2	0.2	0.2	0.2
Polysaccharides (%)	multi-branched polysaccharide	0.5	1.0	5.0	10.0
For adjustment	purified water	78.3	77.8	73.8	68.8
	Total	100.0	100.0	100.0	100.0
Results of Experiments	rotation frequency (rpm)	100	100	100	100
	viscosity (cp)*	1.4	1.4	1.9	2.9

* viscosity meter: E-type viscosity meter, VISCNIC ELD; manufactured by Tokyo Keiki Inc.

Experiment Data 2

The viscosity of each of the following preparations was measured. Polysaccharides used in the following preparations are five kinds of linear polysaccharides used for dermatological preparations (especially for cosmetics).

		(Experimen 1-1)	Experimen 2-1	Experimen 2-2	Experimen 2-3	Experimen 2-4	Experimen 2-5
Common components	1,3-BG	5.0	5.0	5.0	5.0	5.0	5.0
	ethanol	5.0	5.0	5.0	5.0	5.0	5.0
	citric acid 0.1%	10.0	10.0	10.0	10.0	10.0	10.0
	sodium citrate	1.0	1.0	1.0	1.0	1.0	1.0
	methylparaben	0.2	0.2	0.2	0.2	0.2	0.2
Polysaccharide (%)	multi-branched polysaccharide	0.5					
	locust bean gum		0.5				
	xanthan gum			0.5			
	sodium hyaluronate				0.5		
	carrageenan					0.5	
	guar gum						0.5
For adjustment	purified water	78.3	78.3	78.3	78.3	78.3	78.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Results of Experiments	rotation frequency (rpm	100	2.5	--	2.5	--	2.5
	viscosity (cp)*	1.4	240	1200 or more	26	1200 or more	108

Results

According to Experiment data 1, viscosity showed little change when the concentration of multi-branched polysaccharides is changed from 0.5 mass% to 10 mass%.

According to Experiment Data 2, usual linear polysaccharides showed a significant increase in viscosity at a concentration as low as 0.5 mass%.

Discussion

From the comparison of Experiment Data 1 to Experiment Data 2, I was able to conclude that linear polysaccharides exhibit a significant increase in viscosity compared to the viscosity of the multi-branched polysaccharide, and thus I conclude that the present invention provides unexpectedly superior results.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: Apr. 12, 2010

Motoaki Kamachi